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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/561,917

03/23/2007

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EXAMINER

BRYANT, MICHAEL C

ART UNIT

PAPER NUMBER

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/561,917	<b>Applicant(s)</b> HIRAI ET AL.	
	<b>Examiner</b> CASEY BRYANT	<b>Art Unit</b> 2884	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 March 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☒ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/22/05</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Priority***

1. Documents for JP 2003-181546 for claiming priority under 35 USC § 119 having not been received. Acknowledgment is made of applicant's claim for foreign priority based on the application filed in Japan on 6/25/2003. It is noted, however, that applicant has not filed a certified copy of the 2003-181546 application as required by 35 U.S.C. 119(b).

### ***Information Disclosure Statement***

2. The IDS filed 12/22/2005 has been considered.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 6-10 are rejected under 35 U.S.C. 102(b) as being anticipated by **Suzuki et al. (JP 7-211280)**.

Regarding claim 6, Suzuki discloses a position-sensitive electron multiplier tube comprising: an entrance window **900** that transmits a quantum beam; first and second micro channel plates **210<sub>1-N</sub>** (MCPs) capable of generating an electron at a position according to an incidence position of the quantum beam on the entrance window **900**

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and capable of multiplying the electron while maintaining the position; an anode **400** located opposite the second MCP **210<sub>N</sub>**; and a pulse reading circuit **600** capable of acquiring a pulse signal in response to a potential change that occurs when electrons multiplied by the first MCP **210<sub>1</sub>** are emitted from the first MCP, the MCP having an input face located opposite and apart from the entrance window **900**, and an output face located opposite and apart from the second MCP **210<sub>N</sub>** having an input face located opposite and apart from the output face of the first MCP **210<sub>1</sub>**, and an output face located opposite and apart from the anode **400**, and the pulse reading circuit **600** being connected to the output face of the first MCP **210<sub>1</sub>** (Fig. 1; abstract; 0016).

It is further noted that phrases claiming an “*item x* for performing *task y*” are recitations of intended use of the device only require the structure disclosed as being capable of performing the task and do not necessarily have to be disclosed in the reference.

Regarding claim 2, Suzuki discloses a first stack having a first MCP disposed and an first input face and a second stack having a second MCP and second input face located opposite and apart from the first MCP (Fig. 1).

Regarding claim 3, Suzuki discloses the first stack **210<sub>1</sub>** located opposite the entrance window **900** with no other MCP interposed between the entrance window and the first stack (Fig. 1).

Regarding claim 4, Suzuki discloses the additional stacks having a greater multiplication factor than the first stack (0003, 0007, 0023).

Regarding claim 5, Suzuki discloses the detector as a PMT further comprising a photocathode **100** disposed between the entrance window **900** and the input face of the first MCP **210<sub>1</sub>**, wherein the first MCP is located opposite the photocathode **100** (Fig. 1; abstract).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kash et al. (US 5,940,545)** in view of **Suzuki et al. (JP 7-211280)**.

Regarding claim 1, Kash discloses a apparatus (Fig. 4) comprising: a signal generator **5** (oscillator output) capable of generating a reference time pulse in synchronization with the excitation of a sample **5**; a detector **3** capable of detecting a quantum beam (spontaneous emission) and capable of generating a position signal corresponding to a detection position and a detection timing pulse synchronized with a detection timing; a position calculator (XY position) capable of calculating the detection position using the position signal; a time difference measuring device (time-to-amplitude converter) capable of measuring a time difference between the reference time pulse and the detection timing pulse; and a data processor **4** (MCA) capable of storing the detection position calculated by the position calculator and the time difference measured by the time difference measuring device, in association with each other, the

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detector having a position-sensitive electron multiplier tube, the detection timing pulse being generated in response to a potential change that occurs when electrons multiplied by the MCP are emitted and fed to the time difference measuring device (Fig. 4; col. 5, lines 9-37). Kash does not disclose the electron multiplier tube having an entrance window, first and second micro-channel plates (MCPs) and an anode. Suzuki discloses a PMT detector having a position-sensitive electron multiplier tube **200** comprising a window **900**, a plurality of MCPs **210<sub>1-N</sub>** located apart from each other and between the entrance window **900** and an anode **400** (Fig. 1; Abstract; Constitution). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the electron multiplier tube having a plurality of MCPs in the PMT discloses Kash, in order to enable adjustment of the electronic multiplication factor (Fig. 3; abstract; constitution; 0003).

It is further noted that phrases claiming an “*item x* for performing *task y*” are recitations of intended use of the device only require the structure disclosed as being capable of performing the task and do not necessarily have to be disclosed in the reference.

Regarding claim 2, Suzuki discloses a first stack having a first MCP disposed and an first input face and a second stack having a second MCP and second input face located opposite and apart from the first MCP (Fig. 1).

Regarding claim 3, Suzuki discloses the first stack **210<sub>1</sub>** located opposite the entrance window **900** with no other MCP interposed between the entrance window and the first stack (Fig. 1).

Regarding claim 4, Suzuki discloses the additional stacks having a greater multiplication factor than the first stack (0003, 0007, 0023).

Regarding claim 5, Suzuki discloses the detector as a PMT further comprising a photocathode **100** disposed between the entrance window **900** and the input face of the first MCP **210<sub>1</sub>**, wherein the first MCP is located opposite the photocathode **100** (Fig. 1; abstract).

### ***References Cited***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nishizawa et al. (US 7,425,694) is a related case to US App. No. 10/561,917 by the same inventors.

Lee et al. (US 2003/0015661 A1) discloses a MCP having a plurality of separated stacks.

Buchin (US 2006/0081770 A1) discloses an image intensifier using a pair of MCPs have positioned adjacently and having opposing channel angles so as to prevent ion-feedback.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CASEY BRYANT whose telephone number is (571)270-1282. The examiner can normally be reached on Monday - Friday, 8am - 5pm, EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on (571)272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David P. Porta/  
Supervisory Patent Examiner, Art  
Unit 2884

Casey Bryant  
Examiner